

Application No. 09/482,717

AMENDMENTS TO THE CLAIMS

Please amend Claims 2-4, 12, 21-22, and 24 as follows:

1. (Previously Amended) A method for performing echo cancellation within a switching center of a communication network, said switching center being coupled to a plurality of local user devices and a plurality of external transmission media, said method comprising the steps of:
 - 5 providing a pool of echo cancellation units within said switching center;
coupling a first local user device to a first external transmission medium as part of a communication connection between the first local user device and a remote user device;
monitoring the first external transmission medium for at least one of echo cancellation activity and echo energy during the communication connection between the first
10 local user device and the remote user device;
when the detected at least one of echo cancellation activity and echo energy is above a determined threshold, allocating a first echo cancellation unit from the pool of echo cancellation units to the communication connection; and
when the detected at least one of echo cancellation activity and echo energy thereafter
15 falls below the determined threshold, discontinuing the allocation of the first echo cancellation unit to the communication connection.
2. (Currently Amended) The method claimed in Claim 1, wherein:
~~said first external transmission medium includes a trunk wherein the allocating and~~
~~discontinuing steps are performed and further comprising:~~
thereafter monitoring the first external transmission medium for at least one of echo
5 cancellation activity and echo energy during the communication connection between the first
local user device and the remote user device; and

Application No. 09/482,717

when the detected at least one of echo cancellation activity and echo energy is above a determined threshold, again performing echo cancellation on the communication connection.

3. (Currently Amended) The method claimed in Claim [[2]]1, wherein:

said first local user device includes a telephone unit connected to said switching center via a local loop in the discontinuing step, the at least one of echo cancellation activity and echo energy is echo cancellation activity.

4. (Currently Amended) The method claimed in Claim [[3]]1, wherein:

said first external transmission medium includes a trunk;

wherein:

5 said first local user device includes a telephone unit connected to said switching center via a local loop; and wherein:

said step of coupling includes providing a communication path between said telephone unit and said trunk.

5. (Previously Amended) The method claimed in Claim 1, wherein:

said step of monitoring includes receiving a signal from said first local user device indicating that echoes are being audibly perceived by a user thereof.

6. (Previously Amended) The method claimed in Claim 1, wherein:

5 the at least one of echo cancellation activity and echo energy is echo energy and said step of monitoring includes allocating a call classifier to said communication connection and receiving an indication from said call classifier that echoes above a predetermined power level are being received from said first external transmission medium.

Application No. 09/482,717

7. (Previously Amended) The method claimed in Claim 1, wherein:

the at least one of echo cancellation activity and echo energy is echo cancellation activity and said step of monitoring includes assigning an echo cancellation unit to said communication connection and receiving an indication from said echo cancellation unit that echoes above a predetermined power level are being received from said first external transmission medium; and

said step of allocating includes allowing said echo cancellation unit to continue performing echo cancellation for said communication connection for the duration thereof.

8. (Original) The method claimed in Claim 1, wherein:

said pool of echo cancellation units includes at least one multi-channel hardware echo cancellation device.

9. (Original) The method claimed in Claim 1, wherein:

said pool of echo cancellation units includes a programmable digital processing device.

10. (Previously Amended) The method Claimed in Claim 6, when the detected at least one of echo cancellation activity and echo energy fails to exceed the determined threshold within a predetermined time interval after allocating the call classifier, the call classifier terminates the monitoring step.

11. (Previously Amended) A switching center for use within a communication network, comprising:

a plurality of first ports for use in coupling the switching center to a plurality of local user devices;

Application No. 09/482,717

- 5 a plurality of second ports for use in coupling the switching center to a plurality of external transmission media, each of said plurality of external transmission media being coupled at an opposite end to another switching center within the communication network;
- a switch for selectively coupling individual first ports to individual second ports within the switching center for use in establishing communication connections between local
- 10 user devices and remote user devices in the communication network;
- a pool of echo cancellation units that are each capable of reducing echoes received by said switching center from an external transmission medium; and
- an allocation unit for allocating an echo cancellation unit from said pool of echo cancellation units to a communication connection being supported by the switching center
- 15 in response to detection of echo energy above a threshold level from an external transmission medium associated with said communication connection and terminating allocation of the echo cancellation unit to the communication connection in response to detection of echo energy below the threshold level.

12. (Currently Amended) The switching center of Claim 11, wherein:
- 5 said plurality of external transmission media include a plurality of trunks wherein a first local user device is coupled to a first external transmission medium as part of a first communication connection between the first local user device and a remote user device; and wherein the allocating and terminating operations are performed with respect to the first communication connection; and wherein the allocation unit is further operable to thereafter monitor the first communication connection, while the first local user device and remote user device are coupled to the first external transmission medium, for at least one of echo cancellation activity and echo energy.

13. (Original) The switching center of Claim 11, wherein:
- said communication network includes a conventional telephony network.

Application No. 09/482,717

14. (Original) The switching center of Claim 11, wherein:
said pool of echo cancellation units includes a plurality of individual hardware units.

15. (Original) The switching center of Claim 11, wherein:
said allocation unit includes at least one call classifier for detecting echoes associated
with a communication connection.

16-20. (Canceled)

21. (Currently Amended) A method for performing echo cancellation within a
switching center of a communication network, said switching center being coupled to a
plurality of local user devices and a plurality of external transmission media, said method
comprising the steps of:

5 providing at least one echo cancellation unit within said switching center;
coupling a first local user device to a first external transmission medium as part of
a communication connection between the first local user device and a remote user device;
when at least one of echo cancellation activity and echo energy on the first external
transmission medium is above a determined threshold, performing echo cancellation with the
10 at least one echo cancellation unit on the communication connection;
thereafter monitoring the first external transmission medium for at least one of echo
cancellation activity and echo energy; and
when the detected at least one of echo cancellation activity and echo energy thereafter
falls below the determined threshold, discontinuing echo cancellation of signals on the first
15 external transmission medium.

22. (Currently Amended) The method of Claim 21, further comprising:
~~when the at least one of echo cancellation activity and echo energy is above a~~
~~determined threshold, the allocating step is performed~~wherein echo cancellation is

Application No. 09/482,717

5 discontinued and thereafter repeating the performing step on the first external transmission medium during the communication connection between the first local user device and a remote user device.

23. (Previously Added) The method claimed in Claim 21, wherein the at least one echo cancellation unit is a pool of echo cancellation units and further comprising:

allocating a first echo cancellation unit from the pool to the communication connection.

24. (Currently Amended) The method claimed in Claim 23, wherein:

~~said first local user device includes a telephone unit connected to said switching center via a local loop, and~~

5 said first external transmission medium includes a trunk in the discontinuing step, echo cancellation is discontinued when the detected echo cancellation activity falls below the determined threshold.

25. (Previously Added) The method claimed in Claim 24, wherein:

said step of coupling includes providing a communication path between said telephone unit and said trunk.

26. (Previously Added) The method claimed in Claim 23, wherein said allocating step is performed in response to the receipt of a signal from said first local user device indicating that echoes are being audibly perceived by a user thereof.

27. (Previously Added) The method claimed in Claim 21, wherein:

the at least one of echo cancellation activity and echo energy is echo energy and said step of monitoring includes allocating a call classifier to said communication connection and

Application No. 09/482,717

5 receiving an indication from said call classifier that echoes above a predetermined power level are being received from said first external transmission medium.

28. (Previously Added) The method claimed in Claim 21, wherein:
the at least one of echo cancellation activity and echo energy is echo cancellation activity and said step of monitoring includes receiving an indication from said at least one echo cancellation unit that echoes above a predetermined power level are being received
5 from said first external transmission medium.

29. (Previously Added) The method claimed in Claim 28, wherein:
said pool of echo cancellation units includes at least one multi-channel hardware echo cancellation device ; and
said step of allocating includes allowing said at least one echo cancellation unit to
5 continue performing echo cancellation for said communication connection for the duration thereof.

30. (Previously Added) The method claimed in Claim 23, wherein:
said pool of echo cancellation units includes a programmable digital processing device.

31. (Previously Added) The method claimed in Claim 27, when the detected at least one of echo cancellation activity and echo energy fails to exceed the determined threshold within a predetermined time interval after allocating the call classifier, the call classifier terminates the monitoring step.